

COMMENTS ON THE "COREOCARPUS ARIZONICUS-C. SONORANUS
(ASTERACEAE, HELIANTHEAE) COMPLEX"

Edwin B. Smith

Department of Biological Sciences, University of Arkansas, Fayetteville, Arkansas
72701 U.S.A.

ABSTRACT

A recent paper on *Coreocarpus* by B.L. Turner proposed nomenclatural changes in the genus. This note offers comments on the changes.

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Turner (1996) recently reviewed "the *Coreocarpus arizonicus*-*C. sonoranus* complex." In that paper, he reduced *C. sanpedroensis* E.B. Smith to a variety of *C. arizonicus* (A. Gray) S.F. Blake and proposed a new variety, var. *libranus*, in *C. sonoranus* Sherff.

Coreocarpus sanpedroensis is a member of what I called the *C. sonoranus* complex (Smith 1989). That complex included several forms of *C. sonoranus*, several varieties of *C. parthenioides*, and *C. sanpedroensis*.

In artificial hybridizations that I performed (see Table 1 in Smith 1989), *Coreocarpus sanpedroensis* crossed successfully with *C. sonoranus* and *C. parthenioides*; but *C. sonoranus* and *C. parthenioides* would NOT cross in these studies with *C. arizonicus*. While I was not able to attempt the cross *C. sanpedroensis* × *C. arizonicus* (the two did not flower at the same time during my greenhouse study), it is likely that the cross would have failed. This is significant biosystematic information, which Turner (1996) apparently ignored. In addition, *C. sanpedroensis* and *C. sonoranus* both have the achene wing corky, involute, and dissected into separate teeth, whereas *C. arizonicus* has the achene wing thin, spreading, and not dissected into separate teeth (see key, and Figure 1 in Smith 1989). The relationship of *C. sanpedroensis* falls with the *sonoranus* complex, NOT with *C. arizonicus* as treated by Turner (1996). I consider the combination *C. arizonicus* (A. Gray) S.F. Blake var. *sanpedroensis* (E.B. Smith) B.L. Turner a synonym of *C. sanpedroensis* E.B. Smith.

Turner (1996) named one segregant of *Coreocarpus sonoranus* as a new variety [var. *libranus* B.L. Turner]. As I mentioned (Smith 1989), the forms of *C. sonoranus* vary from population to population in an "island variant" pattern. One population will be glabrous, white-flowered, with exaristate achenes, the next will be pubescent, white-flowered, with aristate achenes; the next pubescent, pale yellow-flowered, with exaristate achenes, and so on. The individual populations are more or less uniform, tempting one to recognize varieties.

I raised live plants from achenes of *Van Devender 84-36* (the holotype for Turner's var. *libranus*!), and collected in La Pintada Canyon myself (Smith 3972 [TEX, UARK]). At first glance, the La Pintada Canyon population looks like a new variety (or even a new species). But, with further study of a wider series of collections of *C. sonoranus*, it becomes clear that the various populations are "island variants." If one of these variant populations is named a variety, should they each receive a name? Despite Tom Van Devender's proddings, I prefer treating the species as consisting of a series of forms, and not recognizing the populations with formal varietal epithets. I would synonymize var. *libranus* under *C. sonoranus*.

In summary, I do not see a "*Coreocarpus arizonicus*-*C. sonoranus* complex" in the genus, but a *C. arizonicus* complex and a *C. sonoranus* complex. *Coreocarpus sanpedroensis* belongs in the latter, not the former. I prefer not to recognize a series of varieties in *C. sonoranus*, which Turner's var. *libranus* suggests.

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